



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/786,156	02/26/2004	Teiyuu Kimura	11-229	3461

23400 7590 11/01/2006

POSZ LAW GROUP, PLC
12040 SOUTH LAKES DRIVE
SUITE 101
RESTON, VA 20191

EXAMINER

TOTH, KAREN E

ART UNIT	PAPER NUMBER
----------	--------------

3735

DATE MAILED: 11/01/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/786,156	Applicant(s) KIMURA ET AL.	
	Examiner Karen E. Toth	Art Unit 3735	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-34 is/are pending in the application.
- 4a) Of the above claim(s) 5-8,22,24-29 and 32 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,9-14,17-21,23 and 30 is/are rejected.
- 7) ☒ Claim(s) 2-4,15,16,31,33 and 34 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
 Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
 Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>12/22/05, 2/26/04</u> . | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Election/Restrictions

1. Applicant's election without traverse of claims 1-4, 9-21, 23, 30-31, and 33-34 in the reply filed on 26 September 2006 is acknowledged. Claims 5-8, 22, 24-29, and 32 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected invention, there being no allowable generic or linking claim. Election was made **without** traverse in the reply filed on 26 September 2006.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. Claims 1, 9-14, 19-21, 23, and 30 are rejected under 35 U.S.C. 102(e) as being anticipated by Turcott'879 (US Patent 6997879).

Regarding claim 1, Turcott'879 discloses an apparatus for measuring a biological condition of a living body comprising a light-emitting unit (element 302) configured to emit individually first and second lights to the portion of the body being measured, the first and second lights having wavelengths different from each other (column 3, lines 45-

Art Unit: 3735

47); a light receiving unit configured to receive first and second reflected lights to generate first and second detection signals based on the first and second reflected lights respectively (column 7, lines 23-32); and a measuring unit configured to measure the biological condition based on the different characteristics of the first and second detection signals (column 7, lines 39-49).

Regarding claim 9, Turcott'879 further discloses that one of the lights may be infrared (column 7, lines 5-6), and the other may be green (column 7, lines 3-4, since green light has wavelengths between about 520 and about 570 nm).

Regarding claim 10, Turcott'879 further discloses the light emitting unit including at least two light emitting devices (elements 504a and 504b) for emitting the first and second lights, and at least one receiving element (element 310) to receive the first and second reflected lights.

Regarding claim 11, Turcott'879 further discloses that the two light emitting devices are configured to emit the lights at different times (column 7 line 58 to column 8 line 2).

Regarding claim 12, Turcott'879 further discloses that the device comprises a driving unit configured to drive the at least two light emitting devices while changing the intensity of the first light with respect to the second light (column 10, lines 14-34).

Regarding claim 13, Turcott'879 discloses an apparatus for measuring a biological condition of a living body comprising a light emitting unit (element 302) configured to individually emit an infrared light and a green light to a portion of the body being measured (column 3, lines 45-47 – infrared light has wavelengths of 750 nm to 1

Art Unit: 3735

mm (greater than 650 nm) and green light has wavelengths of 520-570 nm (less than 650 nm)); a light receiving unit configured to receive first and second reflected lights to generate first and second detection signals based on the reflected lights (column 7, lines 23-32); and a measuring unit configured to measure the biological condition based on the different characteristics of the first and second detected signals (column 7, lines 39-49).

Regarding claim 14, Turcott'879 further discloses that the wavelength of the green light is in the range of approximately 460 to 570 nm (column 7, lines 2-4) and that the wavelength of the infrared light is in the range of approximately 780 to 1000 nm (column 7, lines 4-6).

Regarding claim 19, Turcott'879 further discloses the light emitting unit including at least two light emitting devices (elements 504a and 504b) for emitting the first and second lights, and at least one receiving element (element 310) to receive the first and second reflected lights.

Regarding claim 20, Turcott'879 further discloses that the two light emitting devices are configured to emit the lights at different times (column 7 line 58 to column 8 line 2).

Regarding claim 21, Turcott'879 further discloses that the device comprises a driving unit configured to drive the at least two light emitting devices while changing the intensity of the first light with respect to the second light (column 10, lines 14-34).

Regarding claim 23, Turcott'879 further discloses that the apparatus may comprise a housing with a first wall (thick, shaded, bottom wall component in figure 12b)

Art Unit: 3735

and a second, opposite, opened and windowed wall (marked by line for element 1210 in figure 12b), where the light emitting unit (elements 504a and 504 b) are contained in the housing and configured to emit the first and second lights through the window to the portion of the body being measured (figure 12b); where the light receiving unit (element 512) is contained in the housing (figure 12b); and where the first reflection light is based on the first light reflected through the window wall and the second light is based on the second light reflected through the window wall (column 11 line 43 to column 12 line 26).

Regarding claim 30, Turcott'879 discloses a method of measuring a biological condition comprising individually emitting first and second lights to a measurement portion of the living body, where the first and second lights have different wavelengths (column 2, lines 45-50; column 3, lines 45-47); receiving first and second reflected lights to generate first and second detection signals (column 2, lines 50-53; column 7, lines 23-32); and measuring the biological condition based on the different characteristics of the first and second detection signals (column 2, lines 53-56; column 7, lines 39-49).

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
 2. Ascertaining the differences between the prior art and the claims at issue.
 3. Resolving the level of ordinary skill in the pertinent art.
 4. Considering objective evidence present in the application indicating obviousness or nonobviousness.
5. Claim 17 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarussi (US Patent Application Publication 2003/0229276) in view of Turcott.

Regarding claim 17, Sarussi discloses an apparatus for sensing a biological condition including a pulsebeat component and a body movement (paragraph [0027], [0123]), where a light emitting unit sequentially emits differing signals that are in turn sequentially received by a receiving unit and transmitted to a measuring unit (paragraphs [0027]-[0028], [0068]). The measuring unit comprises a converting circuit to convert transmitted detection signals into digitized sequential data (element 42; paragraphs [0073], [0086]); a frequency-analyzing unit configured to obtain two frequency components from each data set, where one of the data sets represents a pulsebeat component and the other represents a movement component (AC and DC; paragraphs [0073], [0087]); and a unit configured to obtain a frequency of at least one of the pulsebeat component or the movement component from the aforementioned frequency components (paragraph [0126]).

Turcott teaches an apparatus for sensing a biological condition using infrared and green lights, as disclosed in claim 13 above, in order to more accurately sense both

Art Unit: 3735

a pulsebeat component and a body movement component. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the device of Sarussi and used green and infrared lights, as taught by Turcott, in order to more accurately sense both a pulsebeat component and a body movement component.

6. Claim 18 is rejected under 35 U.S.C. 103(a) as being unpatentable over Sarussi in view of Turcott, as applied to claim 17 above, and further in view of Suzuki (US Patent Application Publication 2001/0049471).

Sarussi in view of Turcott discloses all the elements of the current invention, as described above, except for the obtaining unit obtaining the frequency of the pulsebeat component and obtaining at least one of a pulse rate and interval between beats based on the pulsebeat component's frequency.

Suzuki teaches an apparatus where a pulsebeat signal is analyzed to obtain a frequency and that frequency is used to obtain a pulse rate (paragraph [0088]), since it is well known in the art to use a frequency signal to obtain a pulse rate. It would have been obvious to one of ordinary skill in the art at the time the invention was made to have made the apparatus of Sarussi in view of Turcott and used the frequency of the pulsebeat component to obtain a pulse rate, as taught by Suzuki, since it is well known in the art to use a frequency to obtain a pulse rate.

Allowable Subject Matter

Art Unit: 3735

7. Claim 2-4, 15-16, 31, 33, 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The prior art of record fails to anticipate or make obvious the structure or method of claims 2-5, 15-16, 31, and 33-34, including, *inter-alia*, using light signals to measure a biological condition of a living body, where a first light signal has a longer wavelength than a second light signal, and the intensity and/or amount of the first light signal is controlled so that it is lower than the intensity and/or amount of the second light signal.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

US patent 6709402 to Dekker, which discloses a similar apparatus.

US Patent 5291884 to Heinemann, which discloses a similar apparatus.

US Patent 6731967 to Turcott, which discloses a similar apparatus.

US Patent 6263222 to Diab, which discloses a similar apparatus.

US patent 5830137 to Scharf, which discloses a similar apparatus.


9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Karen E. Toth whose telephone number is 571-272-6824. The examiner can normally be reached on Monday through Friday.

Art Unit: 3735

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Charles Marmor, II can be reached on 571-272-4730. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

ket


ROBERT L. NASSER
PATENT ENGINEER